

INTERNATIONAL ENVIRONMENTAL LAW AND ACCELERATION OF GLOBAL CHANGE

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Abstract

Anthropogenic pressures on the Earth System have reached a scale where major environmental change can no longer be excluded. Science has already set planetary environmental boundaries within which humanity can operate safely. Transgressing these will likely trigger abrupt environmental change on a planetary scale. Today, mainstream economics seems to believe that economics exist independent of the laws of biology, chemistry and physics. But perpetual economic growth is not possible on a finite planet, so the situation requires new thinking with regard to the global economy and the search for alternative economic models. Cognitive, economic, political and normative transformation, the renewal of civilisation or cultural change are needed to find ways of living for human beings that are fulfilling and consistent with the laws of the planet. Making the transition to more sustainable societies will require nations and groups within nations to cooperate and make the political commitment to achieve this transition. Future development necessitates balancing the interests and concerns of both the environment and the economy. The importance of international environmental law as a tool to balance these potentially conflicting interests is increasing. But despite the proliferations of international environmental agreements, environmental hazards and new environmental challenges have continued to emerge. The effectiveness of environmental law unfortunately remains an unmet challenge.

Keywords

Planetary Boundaries, Economic Growth, Environmental Law, Transformation.

I. Introduction

For nearly 10,000 years our world seemed unimaginably large. Vast frontiers of land and ocean offered infinite resources. Humans could pollute freely, and they could avoid any local repercussions simply by moving elsewhere. Earth's environment has also been a remarkably stable life support system which has allowed human civilisations to develop and flourish. However, some societal collapses have occurred on different continents over the last 13,000 years, partly due to environmental fragility, climate change and a failure to adapt to environmental issues.²

But thanks to advances in public health, the industrial and the agricultural revolutions, the population has surged from about one billion in 1800 to over seven billion today.

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²Diamond (2005).

Our use of resources has also reached staggering levels; in 50 years, global consumption of food and freshwater has more than tripled, and fossil-fuel use has risen fourfold. We now appropriate between one third and one half of all the photosynthesis on the planet. *H. sapiens* has become, directly, or indirectly, the dominant macro-consumer in all major terrestrial and accessible marine ecosystems on the planet.³ The biosphere is being placed under increasing strain by increased consumption of crops and animals per capita. If population and consumption continue to grow at present rates, then by 2050, more than half of the new plant material generated on Earth each year will be required for humans. Today, a profound transformation of Earth's environment is apparent, mainly due to the growth of human activities, which expanded pollution from a local problem to a global assault. Global change has undergone a profound acceleration during the second half of the 20th century. From the late 1950s, the unexpected availability of huge quantities of cheap petroleum initiated a historically unique long-term decline in the price of energy in relation to the price of labour. This shift in relative prices – coined “1950s Syndrome”⁴ – promoted the actual transition from a resource-conserving to a resource-wasting economy, including the temporary abandonment of research in energy efficient technologies. Planet Earth is finite, but humanity's technological capacity to exploit nature now exceeds nature's regenerative capacity and we are running into the limits of growth. It is important to know whether the limits are still ahead, or whether we have already surpassed nature's regenerative capacity and are only now getting the signals that we have gone too far. The only certainty is that we are closer to them than we used to be. In nature, there is a reason why things do not grow indefinitely. Yet the entire canon of mainstream contemporary economics seems to believe that economics exist independently of the laws of biology, chemistry and physics. It assumes, without exception, that infinite economic growth on a finite planet is both desirable and possible.

What lessons can we learn from history about environmental law? Presumably, the first farmers were free to farm wherever they wanted to. However, when society – many thousands of years later – recognized that unchecked agricultural practice and development could be harmful for society as a whole, local rules were developed to govern how and where agriculture could be carried out. In the same manner, our early ancestors experienced no restrictions on where they could dispose of their waste. When human numbers increased and the accumulation of waste was recognized as a health or pollution problem, rules were established to manage waste disposal. A contemporary example of a globally-enforced regulation is the Montreal Protocol, where the international community in 1987 agreed to act on scientific evidence that certain industrial gases can lead to dangerous depletion of the Earth's ozone layer. In all of these cases, control was only established when there was general acceptance in society that a continued state of non-regulation would lead to unacceptable costs. Thus, the history of humanity's relationship with the environment shows that when society learns that a certain practice may jeopardize the well-being of its members, then rules, regulations, and other strategies are established to control the offending practice.

³Rees (2008).

⁴Pfister (2009).

II. International environmental law in time of acceleration of global change

In the last few years, it is becoming clear that human industrial activity over the past two centuries has created a new “global geophysical force” comparable to any force of Nature. We are in the process of ending the Holocene era and are now initiating the Anthropocene era, in which human activity will have as much if not more impact on the biosphere as any natural or planetary force.⁵

A group of 30 leading Earth and Environmental scientists, commissioned by the Stockholm Resilience Centre in 2009, proposed “nine planetary boundaries”, or safety zones, that must not be crossed in order to preserve the planetary and environmental balance that human civilizations, and much of the rest of the biosphere, require.⁶ Crossing these boundaries could “generate unacceptable environmental change for humanity”. The nine planetary boundaries are as follows: climate change, stratospheric ozone, land use change, freshwater use, biological diversity, ocean acidification, nitrogen and phosphorus inputs to the biosphere and oceans, aerosol loading, and chemical pollution. Three critical boundaries have already been exceeded: the rate of biodiversity loss, climate change and human interference with the nitrogen cycles. Although climate change gets ample attention, species loss and nitrogen pollution exceed safe limits by greater degrees. With regard to the stratospheric ozone layer, we are fortunate, because of the actions taken as a result of the Montreal Protocol, and we appear to be on the path that will allow us to stay within this boundary. On the other hand, changes in biodiversity due to human activities have been more rapid in the past 50 years than at any time in human history, and the drivers of change that cause biodiversity loss and lead to changes in ecosystem services are either steady, show no evidence of declining over time, or are increasing in intensity. The climate change problem, which is fundamentally an energy problem, is getting worse. When we look at the proposed technical, institutional, and economic solutions that are part of the current international climate change dialogue, they seem radically insufficient and do not seem to offer much prospect of getting us close to safe planetary boundaries with anything like the speed we need to get there. In terms of carbon dioxide emissions, we are actually going in diametrically the opposite direction of where we should be going if we want to get the climate problem under control.

For the most part, the vast majority of people – the public, mass media, political and economic elites and especially policymakers, do not grasp the significance of planetary boundaries. We may be entering a time of enormous turbulence, in which instabilities of various kinds may develop in global systems. Can we expect crises, including systemic breakdowns of economies and agricultural systems? Is it possible that whole societies will succumb as converging climate, resource, and economic stresses produce internal instability and violence? Some are convinced that we will not really address the climate change problem until it produces some major shocks or instabilities that mobilize broad populations.⁷

⁵Steffen et al. (2004).

⁶Rockstroem et al. (2009).

⁷Homer-Dixon (2009).

Humanity appears caught in a trap with no way out. We are facing a series of interlinked systemic problems – from a natural science point of view consuming beyond our planetary limits; but also problems linked to social aspects such as untenable inequality; growing economic instability and a breakdown in the relationship between ‘more’ and ‘better’. An over-confidence in the markets and a fixation on the paradigm of industrial growth seem, for now, to impede alternative routes of development.

What was the role of international environmental law during the time of acceleration of global change? The history of international environmental affairs is not very long. There were modest efforts at regional and global cooperation for the environment dating as far back as the late 1800s, mostly emanating from Western Europe and North America. These efforts mirrored domestic environmental policy developments and were often concerned with wildlife conservation. In 1872, the Swiss proposed an international commission to protect migratory birds. In 1900, the first formal agreement was signed in London by European colonial powers: the Convention for the Preservation of Animals, Birds and Fish in Africa⁸, with the intent to protect African game species, especially to limit the export of ivory to reduce severe hunting pressure on African elephants. In 1902, the European littoral states signed a treaty to regulate the transportation of toxic substances on the Rhine River⁹. After 28 years of negotiations by European and North American nations, the International Convention for the Prevention of Pollution of the Sea by Oil¹⁰ was signed in 1954.

Environmental law as a distinct system arose in the 1960s in the major industrial economies as it was becoming clear that the cumulative negative environmental effects of human activities were becoming unsustainable in the long term. The first truly international non-governmental environmental organisations (e.g. Greenpeace, WWF) emerged at that time and also the first “Green” political parties came into existence in some countries. Between 1970 and 1972, many industrialized nations established environmental ministries and passed significant environmental legislation. International environmental law changed greatly with the Stockholm Declaration of the United Nations Conference on the Environment in 1972. This conference led to new thinking on how to reduce damages and better preserve the environment through law. The European Union made broad progress on regional environmental cooperation pertaining to toxics, water quality, waste management, air pollution, wildlife protection and noise pollution.¹¹

The “Rio Summit” in 1992 followed the rapid resurgence of environmental concern in the 1980s. Key outcomes of the Rio Summit were the Rio Declaration – a statement of key principles on environment and development; Agenda 21 – a detailed list of recommendati-

⁸Convention Designed To Ensure The Conservation Of Various Species Of Wild Animals In Africa, Which Are Useful To Man Or Inoffensive (adopted 19 May, 1900, but never entered into force) 188 Parry 418, 94 BFSP 715 (Convention for the Preservation of Animals, Birds and Fish in Africa).

⁹Convention Between Alsace-Lorraine, Baden, Bavaria, Hesse, The Netherlands And Prussia Relative To The Carriage Of Inflammable Substances On The Rhine (adopted 4 September, 1902, entered into force 1 April, 1903) 192 Parry 32 (Treaty to regulate transportation of toxic substances on the Rhine River).

¹⁰International Convention For The Prevention Of Pollution Of The Sea By Oil (adopted 12 May 1954, entered into force 26 July, 1958) 327 UNTS 3, 1962 ATS 7).

¹¹Halbert, Erbguth (1999).

ons; the Statement of Forest Principles; the Biodiversity Convention; the Climate Change Convention, precursor to the Kyoto Protocol; the Global Environment Facility – finance investments in environmental protection in the least developed countries; and the UN Commission on Sustainable Development. The UN World Summit for Sustainable Development 2002 in Johannesburg was a follow-up to the 1992 Earth Summit. The meeting was high on rhetoric and platitudes but low on actual accomplishments. Discussions were focused more on meeting specific development rather than environmental objectives. In the last decade, the emerging economies of China, India and Brazil assumed much greater political voice and influence on the world stage, but, for the most part so far, have not made environmental concerns a priority.¹²

Despite the proliferations of international environmental agreements, environmental hazards and new environmental challenges have continued to emerge. Environmental laws were not always implemented effectively and non-implementation, non-enforcement, and non-compliance are so common that they can be viewed as the norm rather than exception in the majority of nations. Many states ratify treaties and enact domestic laws without any expectation of implementation or compliance.¹³ Among the reasons why environmental laws have seldom been successful are inadequate administrative capacities, lack of the requisite scientific knowledge, managerial expertise, trained personnel, financial resources, institutional frameworks, political commitments, and the popular support necessary to implement effective environmental protection programs on a wide scale. Without these capacities, international environmental agreements cannot succeed.

Some of the international environmental laws and national laws have also been poorly conceived: they are overly general, deliberately ambiguous, often self-contradictory, excessively lenient and lacking real teeth.¹⁴ Even thoughtful environmental laws responsive to the specific ecological and social conditions in each country do not always serve as the foundation for successful conservation in most nations. Aspirations for economic growth and inappropriate resource exploitation traditions are the main causes of ecological destruction, and effective remedies must function in these same domains. Legal mandates cannot provide satisfactory replacements for economic and social measures that would address the root causes of ecological harm.

III. The challenge: transformation or great transition

We cannot afford to carry on as we are, especially because there are alternatives where we can live within the limits of the natural world and more fairly with each other, locally, nationally and globally; where we focus on the things that really matter, applying our core human values to what is really valuable.

It is time for the global community to address a number of important but difficult questions about our sacrosanct goal of growth. Growth of what? For whom? For how long? At

¹²Jinpeng (2011).

¹³Sands (2003).

¹⁴Bodansky (2009).

what cost? Paid by whom? Paid when? Or in a more practical way, questions regarding major issues of new market organizations, new forms of global governance concerning a profound shift in attitudes, and a new culture of participation. Over-confidence in the markets and a fixation with the paradigm of industrial growth impede alternative routes of development.¹⁵ A global environmental crisis, especially climate change, requires trans-national politics but a global government neither exists nor is it desirable. How can governments be persuaded to co-operate for the greater good? Why does our knowledge not translate into action? Cognitive awareness and insights seldom translate directly into new behavioural strategies. What are the conditions under which a change in mind sets and the development of alternative behaviour patterns may be achieved? Technological innovation and political regulation can only be effective if “the people” participate in their various roles as polluters, producers and consumers of goods, citizens and voters. Democratic regimes are not well prepared for the level of participation that is required: can free democratic societies cope with the effects of grave changes in the global climate, or might authoritarian regimes possibly be better placed to enforce the necessary measures? An essential question in light of the fact that we live on a planet with finite resources is “what are rational goals for development”? Since the release of the UN Brundtland Report in 1987, humanity’s demand on the biosphere has grown from using the entire planet’s bio capacity, to the current situation of humanity using over one third more than what Earth can regenerate. So, we have to move beyond the dominant view of society today regarding our goals, objectives, means and natural resources management and find alternative views.¹⁶ Our objective should not be more but enough, and our goal fulfilment and not profit. A dominant view of society today seems to be concerned with the maintenance or evolutionary change of status quo in order to avoid radical change. We are concerned with greater efficiency of current systems instead of creating more just and equitable systems and preoccupied with actuality, discovering and understanding “what is” instead of potentiality: providing a vision of “what could be”.

Report *Prosperity without Growth*? By the UK Sustainable Development Commission¹⁷ scrutinizes the assumption that growth is essential for prosperity. The conventional formula for achieving prosperity relies on the pursuit of economic growth. This report challenges that formula. It questions whether economic growth is still a legitimate goal for rich countries, in the context of the huge disparities in income and wellbeing that persist across the globe and the constraints of living within finite environmental limits. Environmental impacts ‘scale with’ economic output: the more economic output there is, the greater the environmental impact – all other things being equal. But is it possible to have prosperity *without* growth and to flourish within limits? The answer is yes. The transition to a Sustainable Economy could be done through a series of steps that governments could take as soon as possible. They fall into three main categories: building a sustainable macro-economy, protecting capabilities for flourishing and respecting ecological limits. Debt-driven materialistic consumption is deeply unsatisfactory as the basis for our macro-economy. The

¹⁵ Ayres (2008).

¹⁶ Hill (2006).

¹⁷ Jackson (2009).

time is ripe to develop a new macro-economics for sustainability that does not rely for its stability on relentless growth and expanding material. The social logic that locks people into materialistic consumerism is extremely powerful, but detrimental ecologically and psychologically. Lasting prosperity can only be achieved by freeing people from this damaging dynamic and providing creative opportunities for people to flourish – within the ecological limits of the planet. The material profligacy of consumer society is depleting natural resources and placing unsustainable burdens on the planet's ecosystems. There is an urgent need to establish clear resource and environmental limits on economic activity and develop policies to achieve them. Three policy suggestions contribute to that task, namely imposing clearly defined resource/emissions caps, implementing fiscal reform for sustainability and promoting technology transfer and international ecosystem protection. Homer-Dixon¹⁸ believes that nonlinear transformation – the great transformation – will come in the future, likely starting in a time of crisis. There are four essential components of the coming of great transformation: a cognitive transition, an economic transition, a political transition, and a normative transition. The cognitive transition will help people better understand the implications of complexity and in turn help societies better cope with complex problems like environmental change. Complex systems are ultimately more than the sum of their parts. They have “emergent” properties and they can flip from one pattern of behaviour to another – that is, they have multiple equilibriums. They show a disproportionality of cause and effect: small causes can cause enormous effects, but sometimes really big changes in the system do not seem to produce any effect at all. Cognitive shift is required so people will better understand that we are living in a complex world characterized by high uncertainty, non-linearity and time lags.

Changing our perceptual framework – shifting our cognition – is not enough. We must also change our behaviours and our political and economic institutions to cope better in an increasingly nonlinear world. Internalizing external costs will be an essential part of our coming economic transition. Another part of this transition is a shift to a steady-state world economy. This shift should also include efforts to enhance systemic resilience. The modern economy is structurally reliant on economic growth for its stability. We are now deeply committed to economic growth because we believe in four equivalencies: that growth equals solvency, freedom, happiness and peace. Liberal economists gave us the tools to destroy the planet's environment and made us believe that the only way we can reduce humankind's load on the natural environment is to have an economic collapse.

We need an alternative to economic growth that addresses these four real equivalencies. It is also a cultural challenge because these equivalencies are deeply embedded in many cultural assumptions. This cultural change will not come easily. When we move to a steady-state economy, we will need to have a clear sense of where we are and will need to know that we can maintain our solvency, happiness, freedom, and peace even though we do not grow. A steady-state global economy does not have to be one in which no one is growing. But if some parts of that economy are growing, others will not be – they may even have to shrink. Redistribution of wealth, income, and opportunity for growth is essential within

¹⁸Homer-Dixon (2009).

the world economy. So the environmental problem – because it is linked to growth – is ultimately a problem of planetary equity, an issue that is rarely discussed.

The political transition is one of the deep institutional and political challenges humankind faces in coming decades. Better democratic problem solving is desired – to raise our collective intelligence at the level of community decision making. We are not going to make genuine progress solving our large-scale environmental, economic and social problems unless we can mobilize people, and coordinate their problem-solving capacity through new democratic processes. We need democratic mobilization to increase the power of our publics relative to special interests that are blocking change. The problem can be addressed only through a reinvigoration of democracy, in the process of getting beyond purely procedural democracy and, perhaps, engaging in some kind of open-architecture process of democratic problem solving. Changing it is going to require some deep rethinking of what forms of political engagement we, as citizens, can undertake in our societies.

The normative transition will be in some respects the deepest cultural shift. We need to shift our common understanding of value and expand the scope of what we mean by “we”. We will not be able to address climate change and energy problems unless we come up with a rough consensus about what the good life is and about what we want as a good life for our children and grandchildren across the societies around the world. In the absence of that general conversation in our societies about moral, spiritual, and existential values, utilitarian values fill up all the space. The moral development of a civilization may be measured by the breadth of its sense of community. A common conception of community may allow us to address our monumental common problems.

Similar ideas can be found in The New Economics Foundation Report *Great Transition*.¹⁹ The authors describe the steps, the alternative where we live within the limits of the natural world and more fairly with each other, locally, nationally and globally; where we focus on the things that really matter, applying our core human values to what is really valuable. Great Transition requires us to rethink much of what we have taken for granted. By sharing our resources more equally, by building better communities and a better society and by safeguarding the natural environment, we can focus on the things that really matter and achieve genuine and lasting progress with higher levels of well-being.

The “Commission on the Measurement of Economic Performance and Social Progress” (“Stiglitz Commission”) Report also represents a major milestone in the literature on economic performance, quality of life, and environmental sustainability.²⁰ It has opened the debate about human well-being in the 21st century. The report distinguishes between an assessment of current well-being and an assessment of sustainability, whether this can last over time. Current well-being has to do with both economic resources, such as income, and with non-economic aspects of peoples’ life (what they do and what they can do, how they feel, and the natural environment they live in). Whether these levels of well-being can be sustained over time depends on whether stocks of capital that matter for our lives (natural, physical, human, social) are passed on to future generations. As with any major

¹⁹Murphy (2009).

²⁰Stiglitz, Sen, Fitoussi (2009).

call for change, the report itself contains tensions and contradictions. Possibly the most significant issue is that the report underestimates the rapidity of global change we are witnessing worldwide. The challenge is that change in resource consumption, growing poverty, and financial stability is much faster than the pace at which governments, statistical offices, and even the public debate are able to move along. This is especially true for all large institutions, which are strong at maintaining the status quo, and weak at adapting to changing circumstances.

How can international environmental law contribute to the transition to a more sustainable future? How can it assist future generations that will be forced to confront hard environmental choices our society has been avoiding? The crucial point is that further delays in the implementation of effective international environmental laws are certain to make the protection of ecosystems and species progressively more difficult in the long run. Leary and Pisupati²¹ identify three common dynamics that characterize the ineffectiveness of legal responses to environmental degradation: (i) treaty congestion; (ii) failure to recognize interlinkages between environmental issues with other international laws, such as human rights; and, (iii) emergence of a kaleidoscopic international legal regime encompassing relationships and interactions between government and non-government.

International environmental law is first and foremost international law: its fundamental unit is the state, not the ecosystem; its fundamental principle is national sovereignty, not the conservation of nature. The inability of states to achieve consensus on anything but a lowest-common-denominator basis, the insistence of most states on retaining unrestricted sovereignty, and the absence of sanctions for non-compliance are problems in all realms of international law. Most international environmental law efforts are aimed at consensus-building among governments and international organizations, not among the people who actually own, use, or damage ecological resources. Unfortunately, when sovereignty conflicts with environmental protection requirements, sovereignty prevails.²²

What about the future of international environmental law in a world of ever-worsening environmental crises? Maybe future responses to a global environmental crisis will be more about good environmental governance rather than just more treaties and laws.²³

Environmental governance in future will need to accommodate the needs and aspirations of peoples from developed and developing countries alike and will have to be based on decisions and actions by a vast range of actors and stakeholders and not just the nation state that has traditionally dominated environmental diplomacy to date. In future, this also suggests a need to better understand the close links to other areas of international law including human rights. Environmental legislation should strengthen civil society rights: freedom to information, participation rights and access to justice. Policy preparation at any level should be participatory, inviting environmental NGOs to play a role in committees, expert networks and numerous consultation processes and hence counterbalance influential industry lobbying at all levels.

²¹Leary, Pisupati (2010).

²²Ebbesson (2010).

²³Leary, Pisupati (2010).

In future there are many legal system requirements that should be met if we really want to see an improvement in the status quo. Society must establish a legal system able to impose both precautionary and remedial measures together with legal rights and regulations promoting environmental protection. Widespread knowledge of applicable laws among all affected parties is an important goal, including widespread public respect for law and legal institutions.

IV. Conclusion

We cannot continue growing, and in fact, so-called “economic” growth already has become uneconomic. The problem of transgressing the environmental boundaries within which humanity can operate safely is driven not by fundamental human *needs*, but by manipulated *wants* that find expression in consumerism. The growth economy is failing since the quantitative expansion of the economic subsystem increases environmental and social costs faster than production benefits, making us poorer not richer, at least in high consumption countries.

Endless growth is a ridiculous notion to the ecologist because we live on a planet with finite resources, the mining and use of some of which is undermining our planet’s life-support systems. Prosperity today means nothing if it undermines the conditions on which prosperity tomorrow depends.

We have opportunities for achieving “a lasting prosperity”. They are many and varied, and most of them – unsurprisingly – start from the grassroots. To successfully navigate the biosphere’s constraints, we need to understand how much nature can provide compared to how much people demand from nature. Shifting to sustainable consumption and production patterns will help improve the well-being of some of the world’s poorest people, as well as protect the resources that nature provides. High on the list is the need for all of us to consume less “stuff” and to seek a type of prosperity outside the conventional trappings of affluence: within relationships, family, community and the meaning of our lives and vocations in a functional society that places value on the future. But the time for compromises and half-measures is over. We must re-evaluate our old assumptions about what is possible. It is fundamental that we recognize that living within ecological limits is the non-negotiable basis for our social and economic development. We have a choice – to set our own limits, rather than have the planet set them for us.

International environmental law and national environmental law have so far very seldom been able to overcome the high priority placed on economic development in virtually all countries. Furthermore, environmental protection is inherently a complex, expensive, difficult, and uncertain process that must be undertaken on a continuing basis into the indefinite future. There is no short, simple, inexpensive way to protect the world’s remaining natural systems, no way which relies on semantic formulations without confronting underlying causes of environmental harm. Legal words cannot serve as substitutes for tangible conservation actions based on people’s perceived self-interest. The preservation of ecological vitality on a broad scale depends on our ability to devise environmental strategies and institutions able to create the essential political, social, and economic con-

ditions that conventional environmental laws have manifestly been unable to foster. Let us hope that utilizing humanity's spiritual dimension soon enough may encourage people to be stewards of creation even when there is no law or no one is watching.

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